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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,941	10/09/2003	Harlan T. Beverly	P17143	3879

46915 7590 06/11/2007  
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EXAMINER
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HUSSAIN, TAUQIR

ART UNIT	PAPER NUMBER
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2152

MAIL DATE	DELIVERY MODE
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06/11/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/683,941	<b>Applicant(s)</b> BEVERLY ET AL.	
	<b>Examiner</b> Tauqir Hussain	<b>Art Unit</b> 2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :02/27/2006,  
10/23/2007, ~~12/27/2006~~.

***Response to Amendment***

1. This action is responsive to amendment is filed on March 3, 2007. A claim 11 is amended as per objection in the non-final office action dated 12/21/2006. Claims 1-30 are pending in this application.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-30, are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art, hereinafter "AAPA" in view of Dunham (Patent No.: US 6,269,431 B1), hereinafter "Dunham.

1. As to claim 1, AAPA discloses, a method for sending data from a source to a destination (Page.1, lines 14-16), comprising:

a host providing to a sending agent of the source, memory addresses of data to be sent to a destination (Page.3, [0008] and [0009], where source host has the physical memory location against the virtual memory address and sending agent has the access to this data) wherein the data is stored in a plurality of physical locations of the source (Fig.2, Step-52,54, Page.4, lines21-26 and Page.5, lines 1-2), each location having a

physical address and a virtual memory address which is mapped to the physical address (Fig.2, block-52, 54, plurality of physical locations; Fig.3, Page.5, lines 3-10, address mapping is shown between virtual memory address to physical memory address).

the sending agent sending the identified data to the destination (AAPA, Page.5, [0013], where sending agent begins sending data packets).

AAPA is silent on sending agent providing to the host virtual memory addresses of the data to be sent to the destination. However, Dunham discloses, sending agent providing to the host at least some of the virtual memory addresses of the data to be sent to the destination (Dunham, Col.2, lines 32-38, where controller which could be sending agent upon request assigns the virtual storage address/virtual memory address and provide it to host processor);

the host identifying to the sending agent the data addressed by the virtual memory addresses provided by the sending agent (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data).

Therefore it would have been obvious to one ordinary skilled in the art at the time the invention was made to combine the teachings of AAPA with the teachings of Dunham in order to provide a method of permitting at least one host processor to obtain from a data storage subsystem access to backup versions. The data storage subsystem has primary data storage, and the backup versions are stored in secondary data

storage linked to the data storage subsystem for transfer of the backup versions from the secondary data storage to the data storage subsystem (Dunham, Summary, Col.1).

2. As to claim 11, AAPA discloses, a system adapted to communicate with a destination, comprising:

memory (Page.1, line 12, host computer inherently contains memory);

a processor coupled to the system memory (Page.1, line 12, host computer inherently contains processor coupled to system memory);

an operating system executable by the processor in memory (Page.1, line 12-13)

a network adaptor (Page.1, lines 10-11);

data storage (Page.1, line 17, packet buffer);

a data storage controller adapted to manage Input/Output (I/O) access to the data storage (Page.1, lines 14-20); and

a device driver executable by the processor in the memory (Page.1, line 18-20),

wherein the memory and the data storage each comprise physical locations adapted to store data, each location having a physical address and a virtual address which is mapped to the physical address (Fig.2, block-52 is virtual address, block-54 is physical address and Page.4, lines 5-6); and

wherein, at least one of the operating system and device driver is adapted to provide a host (Page.1, lines 12-14) and at least one of the device driver and the network adaptor is adapted to provide a sending agent (Page.2, lines 5-7) wherein:

for rest of the limitation, see the rejection of claim 1 above.

3. As to claim 21, is rejected for the same rationale applied to claim 1 and 11 above.

4. As to claims 2, 12 and 22, AAPA and Dunham disclose the invention substantially as in parent claim 1, 11, and 21, including, wherein, the host identifying data comprises the host providing to the sending agent the data addressed by the virtual addresses provided by the sending agent, said method further comprising the sending agent storing the data received from the host in a buffer of the sending agent (Page.1, [0002, lines 14-20]).

5. As to claims 3, 13 and 23 AAPA and Dunham disclose the invention substantially as in parent claims 1, 11 and 21, including, wherein, the host identifying data comprises the host providing to the sending agent the physical addresses of the locations containing the data addressed by the virtual memory addresses provided by the sending agent (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data provided by the controller which could be sending agent).

6. As to claims 4, 14 and 24, AAPA and Dunham disclose, the invention substantially as in parent claims, 1, 11 and 21, including, the method wherein, the physical locations include locations of a first memory and locations of a second memory

and the data identified by the host is stored in the first memory and the physical memory addresses provided by the host are physical memory locations of the first memory (AAPA, Fig.2, block-50, 52 is first memory, block- 54 is second memory, Page.4, [0010], where data translation is shown between block-52 and block-54) containing the data addressed by the virtual addresses provided by the sending agent (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data),

the method further comprising pinning the physical memory locations of the first memory provided by the host to the sending agent to prevent the data addressed by the virtual addresses provided by the sending agent from being swapped to the second memory (AAPA, Fig.2, block-52 first memory is pinned by host and host sends the pinned addresses to tcp agent, Page.5, [0013], where pinning these memory locations prevents the data swapped to the second memory).

7. As to claims 5, 15 and 25, AAPA and Dunham discloses the invention substantially as in parent claims, 1, 11 and 21, including, the sending agent retrieving from the pinned physical memory locations of the first memory (Page.1, line 18, transport protocol driver is sending agent, (AAPA, Page.5, [0013], where pinning of physical location is explained and host provides the physical location against sending agents virtual address from which sending agent retrieves the data before sending to destination), the data addressed by the virtual addresses provided by the sending agent



(Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data); and

unpinning the pinned physical memory locations of the first memory after the sending agent sends to the destination (AAPA, Page.5, [0013, lines 21-23], after completion of data transmission host unpins the memory so data can be swapped to secondary storage location) the data addressed by the virtual addresses provided by the sending agent (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data).

8. As to claims 6, 16 and 26, AAPA and Dunham disclose the invention substantially as in parent claims, 1, 11 and 21, including, receiving from the destination an acknowledgment for data successfully sent by the sending agent and received by the destination (AAPA, Page.5, [0013, lines 16-19]);

wherein the virtual memory addresses provided by the sending agent to the host are the virtual addresses of data sent by the sending agent to the destination (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data) but not acknowledged as successfully received by the destination (AAPA, Page.5, [0013, lines 20-21, where unacknowledged packet are resent means it is acknowledging that packets were not send successfully).

9. As to claims 7, 17 and 27, AAPA and Dunham disclose the invention substantially as in parent claims, 1, 11 and 21, including, receiving from the destination an acknowledgment for data successfully sent by the sending agent and received by the destination (AAPA, Page.5, [0013, lines 16-19], where sending agent receiving as acknowledged packets);

the sending agent providing to the host the virtual addresses of data sent by the sending agent to the destination (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data) but not acknowledged as successfully received by the destination (AAPA, Page.3, [0007], where destination host sends acknowledgment to the source host and resending unacknowledged packets means packets are not acknowledged);

the host identifying to the sending agent the unacknowledged data addressed by the memory addresses provided by the sending agent (Page.5, lines 20-21, where resending data means data has already been identified by host based on the addresses sent by sending agent; and

the sending agent resending the identified unacknowledged data to the destination (Page.5, lines 20-21).

10. As to claims 10, 20 and 30, AAPA and Dunham disclose the invention substantially as in parent claims, 1, 11 and 21, including, pinning the locations of the first memory storing the data to be sent to prevent the data to be sent from being swapped to the second memory (AAPA, Fig. 2, Page.5, [0013, lines 11-14, where

physical memory is first memory and long term memory is second memory and first memory is pinned so data can not be swapped while transmission is in progress);

the host providing to the sending agent in addition to the virtual memory addresses of the data to be sent (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data), the physical addresses of the locations of the first memory storing the data to be sent (AAPA, Page.5, [0013, lines 14-16], where host providing the sending agent a physical address of the data to be sent);

the sending agent retrieving from the pinned locations of the first memory, the data to be sent (AAPA, Page.5, [0013, lines 16-17]); and  
unpinning the pinned locations of the first memory storing the data to be sent after the sending agent retrieves the data from the pinned locations of the first memory storing the data to be sent (AAPA, Page.5, [0013, lines 21-23]).

11. As to claim 8, 18 and 28, AAPA and Dunham disclose the invention substantially as in parent claims, 1, 11 and 21, including, the host providing virtual addresses to the sending agent (Dunham, Col.2, lines 48-53, where host processor accessing data from secondary location means host has identified the address location of the data) includes the host providing to the sending agent at least one data structure which includes in an address field containing the virtual address of one of a plurality of memory locations storing a block of data to be sent to the destination (Dunham, Fig.6, Col.12, lines 40-55, where logical data structures are described), a size field containing a value representing

the size of the block of data (Dunham, Fig.6, Col.12, lines 44-45, where file space region 113 could be the size of the block of data); and

a sequence number field containing a value representing a packet sequence number associated with data within the block of data (Dunham, Fig.6, Col.12, lines 40-55, where storing a tag for the back up version could be the sequence number).

12. As to claim 9, 19 and 29, are rejected for the same rationale as applied to claims 8, 18 and 28 above.

13. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references, as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context.

### ***Response to Arguments***

14. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

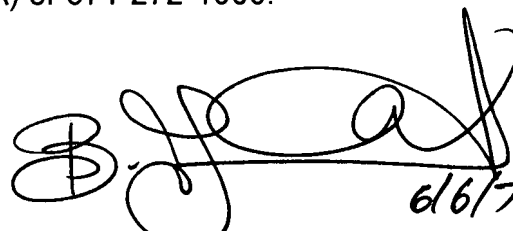
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tauqir Hussain whose telephone number is 571-270-1247. The examiner can normally be reached on 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571 272 3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TH



6/6/7

**BUNJOB JAROENCHONWANIT**  
**SUPERVISORY PATENT EXAMINER**